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so far been prepared by Dr. G. L. Goodale and Mr. Sereno Watson, of Cambridge, Mass., Prof. Wm. Trelease, of Madison, Wis., and Mr. Leo Lesquereux, of Columbus, Ohio. They embrace 32 separate items gleaned from no less than 18 journals, of which two-thirds are foreign, and cover a wide range of topics. The journal is as invaluable to the botanist as to the worker in any other department of science. It must, however, be regretted that the latest information regarding the minute structure of plants and the vast and interesting field of the lower orders does not receive more attention.

CURRENT LITERATURE.

On the Structures which favor Cross-Fertilization in several Plants (with three plates). By William Trelease. From the Proceedings of the Boston Society of Natural History, Vol. XXI, March 15, 1882. The author of this valuable contribution to the literature of cross-fertilization has long been engaged in a careful investigation of the subject and has repeatedly published valuable results. The present pamphlet is a collection of observations heretofore unpublished, and contains notes upon certain of the *Lemnaceae*, *Proteaceae*, *Rutaceae*, *Ericaceae*, *Labiatae* and *Acanthaceae*, for the most part exotics. *Lemna minor*, however, is a native, and this species, one of the very smallest of phanerogams, seems to be well adapted for crossing though if that is a failure there is a chance for self-fertilization. It is protogynous and the two anthers mature successively some days after the stigma. Cross-fertilization is effected by the aid of currents of water, making it a hydrophilous plant. The *Proteaceae* are found to be apparently adapted to self-fertilization, but are so formed as to favor crossing, sometimes even to the exclusion of the former, the pollinators including bees, butterflies, and three distinct groups of birds, Kerner's curious conjecture that in *Dryandra* the transfer of the pollen is effected by the Kangaroos being mentioned simply as a curiosity. But our space forbids any fuller mention of the many interesting details to be met upon every page of this pamphlet. Strange as many of the exotic forms are our interest centers about the little *Lemna* whose effort after crossing is a very strong argument in favor of the idea that continued propagation by self-fertilization is not best for a species.

Supplement to Chapman's Botany.—Chapman's Flora of the Southern States has so long been out of print, and discoveries and changes in nomenclature have been so numerous that we had hoped for a revision rather than a reprint with a supplement. It would, however, probably be too much to ask of our oldest American botanist, and we take this supplement as the best substitute, being really a condensed record of discoveries, most of which have already been noted in our various periodicals and published proceedings of our learned societies. Most of the additions come from Florida, whose flora, so deeply tinged with West Indian forms, has been most zealously examined for the past few years, and the names of Curtiss, Garber, Miss Reynolds, and others, are closely associated with that of Dr. Chapman himself. No fewer than 200 species from Florida have thus been added to our catalogue of the Southern Flora, and this means only species which have not yet been found to extend beyond the limits of the State. The region most favored in new forms, after Florida, is that nest of mountains which is found

where Tennessee, North Carolina, and Georgia interlock and runs northward through Eastern Tennessee and Western N. Carolina. Here are discovered many forms from the north, having found in the elevations of the mountains compensation for a more southern latitude, no fewer than 65 such species being noted in this supplement. Speaking of the northerners we remark the occurrence of *Sedum Rhodiola* in the Mts. of N. C., which was found years ago clinging to a cool cliff near Easton, Penn., and taken as an example of a stranded glacial visitor. *Asplenium ebenoides*, too, has been found in shady ravines in central Alabama, and *Erythronium albidum* upon the very summit of Roan Mountain. The Mississippi river has also kept up a movement of species southward and its influence is very noticeable in glancing over this supplement. Naturally the West has not contributed so many forms as either the South or North, for the barriers in that direction are greater. We note, however, about 25 species which may be considered to have come from the West. These figures of course only apply to the supplement, and in a study of the original Manual it will be seen that this composite flora is tinged more from the north than from the south on account of the greater ease of communication in that direction; while the western forms still remain in the background. Some 15 species are published here for the first time, 10 of them bearing Dr. Chapman's name as author, and 12 of them from Florida. They are an *Alsine*, *Polygala*, *Petalostemon*, *Ludwigia*, *Pinguicula*, two *Euphorbias*, *Croton*, *Tillandsia*, *Xyris*, *Cyperus*, *Rhynchospora*, two *Paspalum*s, and an *Andropogon*. Two orders for the first time find place in our Flora, namely, *Casuarineæ* and *Piperaceæ*, containing together 3 species, all from Florida.

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